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It is quite noticeable that wherever *Bithynia* appears the native forms appear to thin out rapidly.

The species is herbivorous, feeding on algæ and other plants. They are oviparous. The female deposits her eggs on stones and aquatic plants in a mass of gelatinous material which is covered with a tough elastic membrane. The eggs are laid in numbers varying from 15 to 25, in bands of two or three rows.

The December meeting of the academy in the high school building was addressed by Dr. C. W. Hargitt, on the subject of recent activities of Mt. Vesuvius. It was illustrated by photographs made during the last summer and ten years ago. The speaker illustrated many features such as the lava streams, the ash cone, the crater, the partially excavated Pompeii, and many of the small volcanic cones and associated phenomena in the vicinity of Vesuvius.

T. C. HOPKINS,

Corresponding Secretary.

THE CLEMSON COLLEGE SCIENCE CLUB.

The Clemson College Science Club held its regular monthly meeting November 20, 1903. The first on the program was Mr. B. H. Rawl with a paper entitled 'Pasteurized Milk.' The speaker explained fully the objects desired to be accomplished in the pasteurization of milk. The differences between sterilization and pasteurization were pointed out. The speaker, while not minimizing the importance of pasteurization, emphasized the necessity of producing milk under sanitary conditions, thus preventing the entrance of harmful bacteria into the milk. This was considered more desirable than attempting to rid the milk of bacteria after their entrance by such processes as pasteurization, etc. Apparatus for pasteurizing in the home and on a commercial scale was described.

The next on the program was Dr. G. E. Nesom, whose subject was 'The Relation of Bovine Tuberculosis to Man.' This communication consisted largely of a selection of readings from a bulletin published by the author and papers published by Drs. Ravenal and Cary. The speaker referred to the distribution of tuberculous animals in the United

States, the figures showing that Massachusetts contained the highest percentage. The number of tuberculous animals in the south and especially in South Carolina is relatively small. The speaker brought out the fact that there are no differences, morphological or otherwise, in the bacteria of human and bovine tuberculosis. The bacteria of bovine tuberculosis, however, are believed to be more virulent. Numerous experiments were cited to show the ability of bovine tuberculosis bacteria to cause the disease in man. The discovery and uses of tuberculin were pointed out. In view of the transmissibility of bovine tuberculosis to man, the speaker urged in conclusion the necessity of a thorough inspection of all animal products (meat and milk).

F. S. SHIVER,

Secretary.

DISCUSSION AND CORRESPONDENCE.

CONVOCATION WEEK.

THERE are various objects that may be achieved by a meeting of a body like the American Association for the Advancement of Science.

1. It must give opportunities for making the acquaintance of or renewing acquaintance with men whom one likes to know.

2. It must give opportunities for discussion of scientific subjects with those competent to discuss them.

3. It must give opportunities for learning of new discoveries and theories in the field of science, from those who are competent to describe them.

4. It may open the road to the publication of papers submitted, in such a manner as to command general public attention.

5. It may concentrate the influence of men of science, and give their views that power with the general public that can only flow from acknowledged authority.

The three objects first named may be measurably achieved at the meetings of every scientific society of specialists. The two objects last named can not be. They can be prosecuted only by a society for the promotion of all science: hence they should be specially cultivated by the American Association for the

Advancement of Science, which is practically the only American organization of that character.

The way to get the public ear is to get it, as far as one can, at first hand. The door of the American Association for the Advancement of Science is wide open for the public to enter. It should be. Sectional discussions are at their best when there are enough listeners to stimulate the speaker to do his best. Scientific statements are at their best when plainness of speech is compelled by a miscellaneous audience of people educated, indeed, but differently educated.

Therefore, I think the meetings of the association should be held when and where they will attract the largest attendance, and sectional meetings or meetings of affiliated societies so arranged as to make it easy for members to pass from one room to another, and hear something upon many subjects.

The largest attendance, I believe, can be secured in July or August. Convocation week is not even a free week for all college and university teachers; to school teachers it is seldom free; to business and professional men, rarely, if ever. SIMEON E. BALDWIN.

THE meetings of scientific societies seem to me to serve a real purpose in affording a pleasant opportunity for the personal acquaintance of scientific men, but I can not think that they are otherwise a great factor in the progress of science. It seems to me to be highly expedient that all the affiliated societies should meet at the same time and place, but I do not think that this meeting should be coincident with any other great distracting event, because attention will thereby be diverted from the main object of the meeting, and because no city can comfortably distend its possibility of accommodation to include excessive numbers. A general meeting once a year ought to be enough, in view of the many local meetings, the restricted means of many of the members, and the great extent of the country. Both midwinter and midsummer are likely to be unpleasant for travel in America, and, therefore, early autumn seems to me the time when the largest number

of members could be assembled, unless, indeed, the colleges could be induced to unite upon a common time for a spring vacation. Another argument against midwinter, but in favor of the spring or early autumn, lies in the fact that after April the results of a winter's laboratory work are usually in a more presentable condition than they were in the preceding December, while the following December often finds the papers already in print. This is, however, a secondary consideration, since the main office of the meeting is personal, rather than scientific.

THEODORE W. RICHARDS.

BEFORE very much can be done in the way of bringing together men working in different scientific fields, it will be necessary to improve the meetings of the sections. Relatively few men go to the meetings of the American Association because they feel that they will lose something by staying away. The attendance is very largely the result of a sense of duty. One reason for this has been a mistaken idea on the part of the officers of the sections as to the real objects of the meeting. Each presiding officer has felt that the success of the meeting is measured by the number of papers presented before his section and he has done his best to overload the program. In order to finish on time, it has been necessary to ask that discussion of the papers be omitted or be made as brief as possible. To the people who do not read papers, the morning session becomes a trial of endurance with no enlivening features. After a few years of this, people lose all tendency to discuss and it is then necessary for the officers to overload the program.

In the afternoon things are not much better. The local members of the section are both hospitable and energetic. They arrange one or more excursions for each afternoon. People hurry through their lunch and walk round in crowds for hours, not understanding a quarter of what they see, and getting back to their hotels in a state bordering on collapse. It is all well meant, but it is a case of misdirected energy.

The usefulness of the meetings lies in the

personal element, in making men acquainted, and in giving them a chance to discuss things and to exchange ideas in a way that can not be done by letter. The mere reading of papers is a waste of time. Tagging round as one of a crowd on an afternoon excursion is a waste of energy.

The ideal meeting, as I see it, is very different. In the morning we should have short papers, if possible of general interest, and each paper should give rise to an animated discussion taken part in by as many people as possible. In the afternoon men should get together in small groups to talk over matters in a more careful way. There is no objection to one excursion, but that is enough. The evenings would then be left free for general social gatherings which certainly should not be confined to the single sections.

We get a little of all this now, but relatively little and that rather under protest. While there will be some differences of opinion as to what constitutes a successful meeting, it is certain that the meetings can be made of more value than they now are; and that the way to do it is for each member to decide for himself what he wants and then to work for it.

WILDER D. BANCROFT.

TO THE EDITOR OF SCIENCE: The desirability of so organizing and correlating the scientific activities of our country as to secure the largest results both in progress and influence can hardly be open to serious question. Just how to secure these ends is, of course, a difficult problem. We have some three types of scientific societies, two of which only are of immediate concern in the problem under consideration, namely, the more specialized or technical societies, such as the Society of Anatomists, Society of Bacteriologists, Society of Zoologists, etc., and those of broader or more general scope, of which the American Association for the Advancement of Science is representative. Of the other type, represented by the National Academy of Sciences, it is unnecessary to speak, since the exclusiveness of its membership as well as the fact of its independence of meeting as to both time and place do not bring it into direct relation

with the more serious aspects involved in the correlation of the others as to times, places, programs, etc.

While in the first attempt of the conjunction of these technical and affiliated societies with the American Association at Washington a year ago there may not have been entire harmony, nor the realization of that adjustment of programs and hours of meeting which was hoped for, it may be doubted whether, as a whole, there has been a more enthusiastic meeting of scientific men from the entire country, with larger opportunity for congenial conference and acquaintance, in the history of such gatherings in our country.

While there must of necessity exist many of the strictly technical class of associations, and with increased specialization they are likely to become more rather than fewer, there still remains the no less imperative necessity for such organization of scientific effort as will make possible concentrated and consistent and direct sentiment for the enactment of needed measures of influence for whatever emergency may call for such. While this may have been measurably afforded by the Society of Naturalists, it was necessarily limited to a small class of scientists and to a limited range of territory. And though western sections, or *many* sections, be organized, there can never be anything like an ideal organization for aggressive work of a generally representative character through those sources. It may well be doubted, indeed, whether the day and the demand for the existence of the Society of Naturalists have not passed away, and whether a new demand under new conditions has not arisen which ought to be recognized and welcomed.

It is my firm conviction that there are in the American Association and in the technical societies conditions and factors which, properly correlated and adjusted, afford the most hopeful outlook for organized scientific progress within the present generation. And with the submergence of personal ambitions and aspirations and an earnest effort to secure the larger results of broad and well-organized effort an era of advance unparalleled may be entered upon.

CHAS. W. HARGITT.

TO THE EDITOR OF SCIENCE: I cordially sympathize in your desire to have the scientific men of the country come together in the sessions of the American Association for the Advancement of Science. I learned to love the society in the ante-bellum days, when the greatest scientific minds of the whole country made it their business to attend and to participate in the discussions. Every year new members joined us, and we used to say, Mr. X was one of the number who came to us at the Providence or Montreal meeting, and has been a constant attendant ever since. It was more convenient then for the association to meet in the summer—and perhaps one may be excused for believing the warm season to be the best for these gatherings, because of the great success of those early meetings. I like your suggestion of having two meetings annually, one in the summer and the other in the winter, and I should say the localities might be chosen to fit the season—the far south in the winter, and the far north in the summer; or there might be a contrast between the east and the west.

With provisions for two meetings, some of the affiliated societies could arrange to meet by themselves, say in the winter, and in the summer to throw all their energies into their sections. It would be an important point gained if more interest was taken in the sections of the general association at one of the meetings.

Publication holds the first place in the thoughts of many. The question arises, Shall I present my subject before the section or before my special society; and the conclusion reached is usually in favor of the latter, because the paper may be published. If one has something important to present he wishes to have it printed. Of late years the American Association for the Advancement of Science has printed only the presidential addresses, and, therefore, the tendency is to slight the sections. If there were two annual meetings there could be two volumes printed, with some of the more important papers.

Then there is no opportunity for amateurs or new recruits to be represented in type unless there be some provision for the printing

of papers. Perhaps I overlook the great service SCIENCE is doing for us, which prints some of the papers that do not appear in the *Proceedings*.

Section E has instructed its committee to arrange for a summer meeting this year. All will be interested to see the outcome of this move. The meeting will probably be held at St. Louis, and thus two questions will be answered by the results. Can there be an enthusiastic meeting of a single section in the summer, and can the section hold the attention of its members in the midst of the distractions of a world's fair? C. H. HITCHCOCK.

SPECIAL ARTICLES.

THE TOURMALINE LOCALITIES OF SOUTHERN CALIFORNIA.

THE tourmaline deposits of southern California have attracted much attention recently, owing to the development of these mines for their gem stones. A recent discovery of lilac-colored spodumene has added considerably to the interest. For the purpose of acquiring a knowledge of the character of these tourmaline deposits and of studying the associated minerals, the writer spent several weeks among these mines last summer and collected some very interesting material. In this note is given a brief account of the principal localities and of the minerals that have been found there. The writer intends to make a complete study of this remarkable field, and especially of the minerals occurring in it, many of which are of more than ordinary interest. Some of the work has already been completed* and the remainder is well under way.

The gem tourmalines occur in rather large quantities, but are inferior to the Maine tourmalines both in color and in the brilliancy of the cut gems. The localities at which they have been found are comprised in an area less than thirty miles across in northern west-central San Diego County, extending into Riverside County and including portions of Smith's Mountain and the western part of the

* 'Spodumene from San Diego Co., California,' by W. T. Schaller, Bull. Dept. Geol. Univ. of Cal., Vol. 3, No. 13.